60th Anniversary Project No.6

YAMAKIN

TMR MTA CEMENT

Dental pulp capping material

Even easier to use with variations in color and volume!

2 colors - **White** and **Light Ivory** - are available!

White　Light Ivory

Color Type

Container Type

3g

Microtube Type for ease of use

0.2g × 3pcs

TMR-MTA Cement was developed in cooperation with the Health Sciences University of Hokkaido.

TMR MTA CEMENT

1 Bismuth Free

Zirconia is used as a radiographic agent for various biological cases, such as in dental materials and joint prosthesis.
Zirconia is a chemically stable substance so change of color is unlikely to happen.

	Exposure time of LED irradiator			
	0 second	10 seconds	30 seconds	90 seconds
TMR MTA CEMENT White				
TMR MTA CEMENT Light Ivory				
Prototype containing 20% of Bismuth oxide				

Verified under oxygen insulated condition by glycerin.

2 Easy to Mix with a Small Amount of Water

The bearing effect of the spherical silica particles improves the product's fluidity. This enables you to make an even paste easily with a small amount of water in a short time.

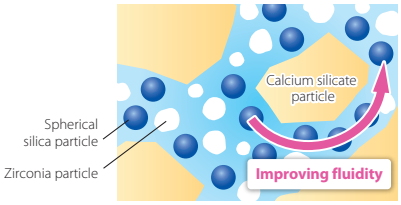


Image of bearing effect

ball bearing

3 High Compressive Strength

Since it sets quickly, the product achieves high compressive strength (about 90 MPa) from one day after application. The compressive strength reaches about 140 MPa after a week, matching the compressive strength of glass ionomer cement.

4 Quick Setting

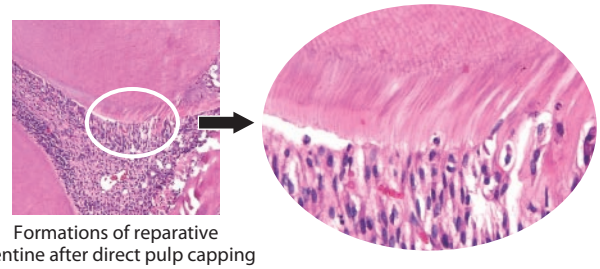
Since it can be mixed with a small amount of water, the product sets quickly so that initial setting is completed in 15 to 30 minutes. Also, it sets sufficiently without any need to replenish the moisture with a moistened cotton pellet after application. If the paste gets dry and difficult to handle, the viscosity of the paste can be adjusted by adding moisture.

Moisture Ratio (Powder : Water)	State of Paste	Handling Tine	Initial Setting Time
20% (0.2g : 0.05g)	Hard	About 3 min.	15-30 min.
25% (0.2g : 0.07g)	Soft	About 6 min.	30-40 min.
30% (0.2g : 0.09g)	Very Soft	About 9 min.	40-60 min.

Note: As indicated in the above chart, the initial setting time will be longer if the paste is softer. Remove excess moisture with a dry cotton pellet etc. after application.

5 Biocompatibility (Promoting Effect of Hard Tissue Formation)

New formation of dentine is confirmed, with odontoblast-like cells arrayed in a fence-like formation 1 week after direct pulp capping with TMR-MTA cement.



Formations of reparative dentine after direct pulp capping
(Posterior tooth of rat, after 1 week)

Contributed by: The Health Sciences University of Hokkaido

Physical property (White and Light Ivory)

Mixing time	About 30 sec.
Handling time	About 3 min.
Initial setting time	30 min. or less
Compressive strength	One day later about 90 MPa One week later about 140 MPa
X-ray contrast property	Exhibited
pH	One hour later 10.8 One day later 11.5 One week later 11.6

ISO 6876 In-house testing data (Moisture Ratio: 20%)

Operation procedures

Prior to use, read the Instructions For Use.

1

Place the product (powder) on a dental mixing paper or a mixing glass pad.

2

Drip an appropriate amount of purified water near the powder. The standard ratio of powder and liquid is 1 g of liquid against 4 g of powder (moisture ratio: 20%). The purified water should be sterile.

3

Mix the powder and purified water with a spatula etc. for about 30 sec. to make it into an even paste form.

4

Cap the exposure site with the mixed material using an instrument etc. (Handling time / 3 min. after mixing)

[Adaptation]
This product is intended to be used for pulp exposure of non-infected tooth pulp with a size of ≦ 2mm, in cases where pulp exposure is caused by cavity preparation or caused incidentally.

LINEUP

Product name	Content	Type of Packing
TMR-MTA Cement (White, Light Ivory)	0.2g x 3 3 g	Micro tubes Glass Container

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